

UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF TEXAS

UNITED STATES OF AMERICA,	)	
	)	
and	)	
	)	
THE STATE OF OHIO	)	
	)	
Plaintiffs,	)	
	)	
and	)	
	)	
the Memphis Shelby County	)	
Health Department,	)	
Plaintiff-Intervener,	)	
	)	
v.	)	CIVIL ACTION NO.
	)	
The Premcor Refining Group Inc., and	)	
The Lima Refining Company,	)	
Defendants.	)	
_____	)	

**CONSENT DECREE ADDENDUM**

WHEREAS, Plaintiff, the United States of America ( "Plaintiff" or "the United States"), on behalf of the United States Environmental Protection Agency ( "EPA"), has simultaneously filed a Complaint against and lodged this Consent Decree Addendum ("Addendum") with The Premcor Refining Group Inc. and the Lima Refining Company (collectively, "Premcor") for alleged environmental violations at petroleum refineries owned and operated by Premcor;

WHEREAS, the United States has initiated a nationwide, broad-based compliance and enforcement initiative involving the petroleum refining industry (the "United States' Refinery Initiative");

WHEREAS, Valero Energy Corporation acquired Premcor Inc. and its subsidiaries via the September 1, 2005, merger of Premcor Inc. with and into Valero Energy Corporation, with Valero

Energy Corporation being the surviving corporation of the merger, and with Valero Energy Corporation becoming the ultimate parent of Premcor;

WHEREAS, on November 23, 2005, this Court entered at Docket No. SA-05-CA-0569-RF a separate Consent Decree ("Consent Decree") between the United States, certain plaintiff-interveners, and certain corporate subsidiaries of Valero Energy Corporation (collectively "Valero"), pursuant to the United States' Refinery Initiative, governing petroleum refineries owned by Valero and not subject to this Addendum;

WHEREAS, the United States' Complaint alleges that Premcor has been and is in violation of certain provisions of the Clean Air Act, 42 U.S.C. §7401 et seq., its implementing regulations, the relevant provisions of applicable State Implementation Plans ("SIPs"), and federally-enforceable permits;

WHEREAS, the United States has identified violations of certain provisions of the Clean Air Act, 42 U.S.C. §7401 et seq., its implementing regulations, the relevant provisions of the Ohio SIP, and federally-enforceable permits related to leak detection and repair ("LDAR") services provided by a third party contractor at the Lima Refinery;

WHEREAS, the United States conducted a lengthy and detailed investigation of emission events at Premcor's refinery in Port Arthur, Texas, including, but not limited to, the emission events listed in Appendix T;

WHEREAS, Premcor has not answered or otherwise responded, and need not answer or otherwise respond, to the Complaint in light of the settlement memorialized in this Addendum;

WHEREAS, Premcor has waived any applicable federal or state requirements of statutory notice of the alleged violations;

WHEREAS, Premcor has denied and continues to deny the violations alleged in the Complaints and maintains its defenses to the alleged violations;

WHEREAS, by entering into this Addendum, Premcor has indicated that it is committed to proactively resolving the allegations of environmental concerns related to its operations raised in the Complaints;

WHEREAS, Premcor has, in the interest of settlement, agreed to undertake installation of significant air pollution control equipment and enhancements to air pollution management practices at its refineries to reduce air emissions;

WHEREAS, the parties agree that the installation of equipment and implementation of controls pursuant to this Addendum will achieve major improvements in air quality control, and also that certain actions that Premcor has agreed to take are expected to achieve advances in technology and other methods of air pollution control;

WHEREAS, projects undertaken pursuant to this Addendum are for the purposes of abating or controlling atmospheric pollution or contamination by removing, reducing, or preventing the creation of emission of pollutants ("pollution control facilities"), and as such, may be considered for certification as pollution control facilities by federal, state or local authorities;

WHEREAS, in anticipation of entry of this Addendum, Premcor has commenced or completed installation, operation and/or implementation of certain emission control technologies or work practices at various refineries governed by this Addendum;

WHEREAS, the State of Ohio is co-plaintiff in this action, and the Memphis Shelby County Health Department (collectively referred to herein as "Plaintiff-Interveners") has filed a Complaint in Intervention, alleging that Premcor was and is in violation of the applicable Clean Air Act State Implementation Plan ("SIP") and other state environmental statutory and regulatory requirements;

WHEREAS, Premcor has not answered or otherwise responded, and need not answer or otherwise respond, to the Complaints in Intervention in light of the settlement memorialized in this Addendum;

WHEREAS, the United States, Plaintiff-Interveners, and Premcor have consented to entry of this Addendum without trial of any issues;

WHEREAS, the United States, Plaintiff-Interveners, and Premcor have agreed that settlement of this action is in the best interest of the parties and in the public interest, and that entry of this Addendum without further litigation is the most appropriate means of resolving this matter;

WHEREAS, the objective of this Addendum is substantially to apply, in accordance with the specific provisions contained herein, the requirements of the Consent Decree to Premcor; and

WHEREAS, for ease of reference, each paragraph, part, or section in this Addendum corresponds with the related paragraph, part, or section in the Consent Decree, if any;

NOW, THEREFORE, without any admission of fact or law, and without any admission of the violations alleged in the Complaints, it is hereby ORDERED AND DECREED as follows:

#### **I. JURISDICTION AND VENUE**

1. The Complaints state a claim upon which relief can be granted against Premcor under Sections 113, 167 and 211 of the Clean Air Act, 42 U.S.C. §§ 7413, 7477 and 7545, Section 103(c) of the Comprehensive Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9603(c), Section 325(b) of the Emergency Planning and Community Right-to-Know Act ("EPCRA"), 42 U.S.C. § 11045(b), and 28 U.S.C. § 1355. This Court has jurisdiction of the subject matter herein and over the parties consenting hereto pursuant to 28 U.S.C. § 1345 and pursuant to Sections 113, 167, and 211 of the CAA, 42 U.S.C. §§ 7413, 7545 and 7477, Section 103 of CERCLA, 42 U.S.C. § 9603, and Section 304 of EPCRA, 42 U.S.C. § 11004.

2. Venue is proper under Section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b), and under 28 U.S.C. § 1391(b) and (c).

3. Notice of the commencement of this action has been given to the States of Ohio and Texas and the Memphis Shelby County Health Department in accordance with Section 113(a)(1) of the Clean Air

Act, 42 U.S.C. § 7413(a)(1), and as required by Section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b).

## **II. APPLICABILITY**

4. The provisions of this Addendum shall apply to and be binding upon the United States, the Ohio Environmental Protection Agency (“Ohio EPA”), and the Memphis Shelby County Health Department, and upon Premcor, as well as Premcor’s respective successors and assigns, and shall apply to each of the refineries identified herein until the Addendum is terminated with respect to such refinery pursuant to Part XXV (Termination); provided, however, that with respect to any obligation applicable to an individual Premcor Refinery pursuant to Parts IV through XXIV, inclusive, such obligation shall apply only to the specific Premcor corporate entity that owns such Refinery.

5. In the event that Premcor proposes to sell or transfer any of its refineries subject to this Addendum, then Premcor shall advise in writing to such proposed purchaser or successor-in-interest of the existence of this Addendum and provide a copy of the Addendum, and shall send a copy of such written notification by certified mail, return receipt requested, to EPA before such sale or transfer, if possible, but no later than the closing date of such sale or transfer. This provision does not relieve Premcor from having to comply with any applicable state or local regulatory requirement regarding notice and transfer of facility permits.

## **III. FACTUAL BACKGROUND**

6. Among other facilities, Premcor operates four petroleum refineries in the United States for the manufacture of various petroleum-based products, including gasoline, diesel, and jet fuels, and other marketable petroleum by-products. Three of Premcor’s refineries are subject to this Addendum, and the fourth is subject to a separate consent decree in United States v. Motiva Enterprises, et al., No. 01-cv-00978 (S.D. Tex.).

7. As more specifically described in Appendix A, Premcor's petroleum refineries subject to this Addendum are located at: Lima, Ohio; Memphis, Tennessee; and Port Arthur, Texas (hereinafter collectively, the "Premcor Refineries").

8. Reserved.

9. Petroleum refining involves the physical, thermal and chemical separation of crude oil into marketable petroleum products.

10. The petroleum refining process at the Premcor Refineries results in emissions of criteria air pollutants, including nitrogen oxides ("NO<sub>x</sub>"), carbon monoxide ("CO"), particulate matter ("PM"), sulfur dioxide ("SO<sub>2</sub>"), as well as volatile organic compounds ("VOCs") and hazardous air pollutants ("HAPs"), including benzene. The primary sources of these emissions are the fluid catalytic cracking units ("FCCUs"), process heaters and boilers, the sulfur recovery plants, wastewater treatment systems, fugitive emissions, and flares.

11. Reserved.

#### **IV. NO<sub>x</sub> Emissions Reductions from Heaters and Boilers**

**Program Summary:** Premcor will implement a program to reduce NO<sub>x</sub> emissions from refinery heaters and boilers greater than 40 MMBtu/hr (HHV) by committing to an interim system-wide weighted average concentration emission limit for NO<sub>x</sub> of 0.060 lbs./MMBtu, to be achieved by December 31, 2011, and a final system-wide weighted average concentration emission limit for NO<sub>x</sub> of 0.044 lbs./MMBtu, to be achieved by December 31, 2013.

12. Premcor shall implement at the Premcor Refineries various NO<sub>x</sub> emission reduction measures and techniques to achieve system-wide NO<sub>x</sub> emission levels for certain identified heaters and boilers at the Premcor Refineries. For purposes of this Addendum, "heaters and boilers" shall be defined to include any stationary combustion unit used for the purpose of burning fossil fuel for the purpose of (i) producing power, steam or heat by heat transfer, or (ii) heating a material for initiating or promoting a process or chemical reaction in which the material participates as a reactant or catalyst, but expressly excluding any turbine, internal combustion engine, duct burner, CO boiler, incinerator or incinerator waste heat boiler.

**A. Initial Inventory, Annual Update, and Compliance Plan for Premcor Refineries**

13. Appendix B to this Addendum (the "Initial Inventory") provides an initial list of all heaters and boilers at the Premcor Refineries for which heat input capacity is greater than 40 MMBtu/hr (HHV). For purposes of this Addendum, "Covered Heaters and Boilers" shall include all heaters and boilers with heat input capacity greater than 40 MMBtu/hr (HHV) regardless of any applicable firing rate permit limitations. However, the FCCU startup heaters at the Port Arthur Refinery designated as B-103A and B-103B will not be considered Covered Heaters provided that each heater is fired no more than 500 hours in any calendar year. Premcor will include this limitation in an operating permit pursuant to Paragraph 291.

14. The Initial Inventory identifies previously constructed heaters and boilers at the Premcor Refineries that comprise the initial list of Covered Heaters and Boilers. The Initial Inventory also provides the following information concerning the Covered Heaters and Boilers:

- a. Premcor's designations for each of the Covered Heaters and Boilers;
- b. Identification of heat input capacity, and the source of such identification, for each of the Covered Heaters and Boilers. For purposes of this subparagraph, heat input capacity for each Covered Heater or Boiler shall equal the lesser of any applicable permit limit or Premcor's best then-current estimate of its maximum heat input capacity (hereinafter, "Heat Input Capacity");
- c. Identification of all applicable NOx emission limitations, in pounds per million Btu, for each of the Covered Heaters and Boilers; and
- d. Statement of whether a continuous emission monitoring system ("CEMS") for NOx has been installed on the respective Covered Heater or Boiler.

15. Premcor shall submit to EPA an annual update to the Initial Inventory on or before March 31 of each calendar year from 2008 through 2013, inclusive (the "Annual Update Report"), provided, however, that Premcor shall not be obligated to submit any Annual Update Report after satisfying the provisions of Paragraphs 21 and 27. Premcor shall designate the final Annual Update

Report. The Annual Update Report shall revise any information included in the Initial Inventory or most recent Annual Update Report to the extent appropriate based upon the construction of a Covered Heater or Boiler or any change during the prior year to any of the previously existing Covered Heaters and Boilers, including the date of installation of any CEMS installed during the prior year. The Annual Update Report shall also include for each Covered Heater and Boiler the estimated actual emission rate in pounds of NO<sub>x</sub> per MMBtu heat input (HHV) and tons per year, and the type of data used to derive the emission estimate (i.e., emission factor, stack test, or CEMS data).

**B. Interim Emission Reductions and Timeframes for Premcor Refineries**

16. On or before December 31, 2008, Premcor shall submit to EPA a compliance plan for attainment, by December 31, 2011, of a system-wide weighted average, as determined in accordance with Paragraph 28, for Covered Heaters and Boilers of 0.060 lbs.-NO<sub>x</sub>/MMBtu (the "Interim Compliance Plan"). The Interim Compliance Plan is intended to reflect Premcor's then-current strategy for satisfying the requirements of Paragraph 17. Premcor shall not be bound by the terms of the Interim Compliance Plan.

17. By no later than December 31, 2011, Premcor shall install NO<sub>x</sub> control technologies on, or otherwise limit NO<sub>x</sub> emissions from, certain Covered Heaters and Boilers such that the system-wide weighted average, as determined in accordance with Paragraph 28, for NO<sub>x</sub> emissions from the Covered Heaters and Boilers is no greater than 0.060 lbs.-NO<sub>x</sub>/MMBtu.

17A. In the context of satisfying the requirements of Paragraph 17, Premcor shall install controls at a minimum of three Covered Heaters and Boilers at each of the Premcor Refineries to achieve a NO<sub>x</sub> emission rate of no greater than 0.044 lbs.-NO<sub>x</sub>/MMBtu at each selected heater and boiler by December 31, 2011. At least one of the three controlled Covered Heaters and Boilers at the Lima and Port Arthur Refineries will have a heat input capacity in excess of 150 MMBtu/hr.



18. Premcor shall select from among the Covered Heaters and Boilers those units for which NOx emissions shall be controlled or otherwise reduced so as to satisfy the requirements of Paragraphs 17 and 17A.

19. For the purposes of Paragraphs 17 and 17A and in the event that Premcor permanently ceases operation of any Covered Heaters or Boilers on or before December 31, 2011, then Premcor may include each such shutdown unit in its demonstration of compliance with Paragraphs 17 and 17A if Premcor notifies the appropriate permitting authority that such unit is no longer operational and requests the withdrawal or invalidation of any permit or permit provisions authorizing operation of such unit. For purposes of Premcor's demonstration under Paragraph 28 of compliance with Paragraph 17, the emissions of any such shutdown unit shall be equal to 0.000 lbs/MMBtu NOx, and the heat input attributed to any shutdown Covered Heater or Boiler shall be its Heat Input Capacity prior to shutdown.

**C. Final Emission Reductions and Deadlines for Premcor Refineries**

20. On or before December 31, 2010, Premcor shall submit to EPA a compliance plan for attainment by December 31, 2013, of a system-wide weighted average for Covered Heaters and Boilers of 0.044 lbs.-NOx/MMBtu (the "Compliance Plan"), as determined in accordance with Paragraph 28. The Compliance Plan is intended to reflect Premcor's then-current strategy for satisfying the requirements of Paragraph 21. Premcor shall not be bound by the terms of the Compliance Plan.

21. By no later than December 31, 2013, Premcor shall install NOx control technology on, or otherwise limit NOx emissions from, certain Covered Heaters and Boilers such that the system-wide weighted average, as determined in accordance with Paragraph 28, for NOx emission from the Covered Heaters and Boilers is no greater than 0.044 lbs.-NOx/MMBtu.

22. Premcor shall select from among the Covered Heaters and Boilers those units for which NOx emissions shall be controlled or otherwise reduced so as to satisfy the requirements of Paragraph 21.

23. For the purposes of Paragraph 21 in the event that, on or before December 31, 2013, Premcor permanently ceases operation of any Covered Heaters or Boilers, then Premcor may include each such shutdown unit in its demonstration of compliance with Paragraph 21 if Premcor notifies the appropriate permitting authority that such unit is no longer operational and requests the withdrawal or invalidation of any permit or permit provisions authorizing operation of such unit. For purposes of Premcor's demonstration under Paragraph 28 of compliance with Paragraph 21, the emissions of any such shutdown unit shall be equal to 0.000 lbs/MMBtu NO<sub>x</sub>, and the heat input attributed to any shutdown Covered Heater or Boiler shall be its Heat Input Capacity prior to shutdown.

**D. Reserved**

24. – 26. Reserved.

**E. Compliance Demonstration**

27. By no later than March 31, 2012, Premcor shall submit to EPA a report demonstrating compliance with Paragraph 17. By no later than March 31, 2014, Premcor shall submit to EPA a report demonstrating compliance with Paragraph 21. The compliance reports submitted pursuant to this paragraph shall include the following information for the relevant refineries, as applicable to Premcor's interim or final compliance demonstration:

a. The NO<sub>x</sub> emission limit for each Covered Heater or Boiler at the Premcor Refineries which is the least of the following: (i) the NO<sub>x</sub> emission limit, in pounds per MMBtu at HHV (as a 365-day rolling average if based on CEMS, or as a 3-hour average if based on stack tests) based upon any existing federally enforceable, non-Title V (permanent) permit condition, including such a condition as may be reflected in a consolidated permit (where applicable), of the Covered Heater or Boiler, or (ii) the NO<sub>x</sub> emission limit, in pounds per MMBtu at HHV, reflected in any permit application for a federally enforceable, non-Title V (permanent) permit, including a consolidated permit where such limit would also be permanent, submitted by Premcor for such Covered Heater or Boiler prior to the date of submittal of the Compliance Report. In the event that Premcor identifies a

NOx emission limit, in pounds per MMBtu at HHV, for a Covered Heater or Boiler pursuant to this paragraph based on a NOx emission limit then reflected in a pending permit application, Premcor shall not withdraw such application nor may Premcor seek to modify that application to increase the NOx emission limit reflected in such application without prior EPA approval.

b. Heat Input Capacity, in MMBtu/hr at HHV, for each Covered Heater and Boiler at the Premcor Refineries, including an explanation of any change relative to that reported in the most recent Annual Update.

c. A demonstration of compliance with Paragraph 17 or 21, as applicable, performed in accordance with Paragraph 28.

28. Premcor shall demonstrate compliance with the provisions of Paragraph 17 by the following inequality:

$$0.060 \geq [(\sum_i^n (EL_i \times HIR_i)) + IVN] / [\sum_i^n (HIR_i) + IVD]$$

Premcor shall demonstrate compliance with the provisions of Paragraph 21 by the following inequality:

$$0.044 \geq [(\sum_i^n (EL_i \times HIR_i)) + FVN] / [\sum_i^n (HIR_i) + FVD]$$

For the purposes of Paragraph 28:

$EL_i$  = The relevant NOx Emission Limit for the Premcor Covered Heater or Boiler "i", in pounds per million Btu (HHV), as reported pursuant to Paragraph 27(a);

$HIR_i$  = Heat Input Capacity of the Premcor Covered Heater or Boiler "i", in million Btu (HHV) per hour, as reported pursuant to Paragraph 27(b);

$n$  = The total number of Covered Heaters and Boilers at the Premcor Refineries.

$IVN$  = The summation, in pounds per hour, of the products of the relevant NOx Emission Limit [in lbs per million Btu (HHV)] and the Heat Input Capacity (in million Btu per hour) for each of the

Covered Heaters and Boilers as reported in the numerator in the interim compliance report (to be submitted by Valero to EPA by March 31, 2010) pursuant to Paragraph 27 of the Consent Decree.

IVD = The summation of the Heat Input Capacities in million Btu (HHV) per hour for all of the Covered Heaters and Boilers as reported in the denominator in the interim compliance report (to be submitted by Valero to EPA by March 31, 2010) pursuant to Paragraph 27 of the Consent Decree.

FVN = The summation, in pounds per hour, of the products of the relevant NO<sub>x</sub> Emission Limit [in lbs per million Btu (HHV)] and the Heat Input Capacity (in million Btu per hour) for each of the Covered Heaters and Boilers as reported in the numerator in the final compliance report (to be submitted by Valero to EPA by March 31, 2012) pursuant to Paragraph 27 of the Consent Decree.

FVD = The summation of the Heat Input Capacities in million Btu (HHV) per hour for all of the Covered Heaters and Boilers as reported in the denominator in the final compliance report (to be submitted by Valero to EPA by March 31, 2012) pursuant to Paragraph 27 of the Consent Decree.

**F. Monitoring Requirements**

29. By no later than December 31, 2013, for Covered Heaters and Boilers existing on the Date of Lodging for which Premcor takes an emission limit of <0.060 lbs NO<sub>x</sub>/MMBtu without adding additional controls to meet the requirement of Paragraphs 17 and 21; and beginning no later than 180 days after installing controls on a Covered Heater and Boiler for purposes of compliance with the requirement of Paragraphs 17 and 21, Premcor shall monitor each such Covered Heater or Boiler at the Premcor Refineries as follows:

a. For a Covered Heater or Boiler at the Premcor Refineries with a Heat Input Capacity of 150 MMBtu/hr (HHV) or greater, Premcor shall install or continue to operate a continuous emission monitoring system ("CEMS") for NO<sub>x</sub>;

b. For a Covered Heater or Boiler at the Premcor Refineries with a Heat Input Capacity greater than 100 MMBtu/hr (HHV) but less than or equal to 150 MMBtu/hr (HHV), Premcor shall install or continue to operate a CEMS for NO<sub>x</sub>, or monitor NO<sub>x</sub> emissions with a predictive emissions monitoring system ("PEMS") developed and operated pursuant to the requirements of Appendix S of this Addendum;

c. For a Covered Heater or Boiler at the Premcor Refineries with a Heat Input Capacity of less than or equal to 100 MMBtu/hr(HHV), Premcor shall conduct an initial performance test and any periodic tests that may be required by EPA or by the applicable State or local permitting authority under applicable regulatory authority. Premcor shall report the results of the initial performance testing to EPA and the appropriate Plaintiff-Intervener. Premcor shall use Method 7E or an EPA-approved alternative test method to conduct initial performance testing for NOx emissions required by this subparagraph (c).

Nothing in this Addendum shall preclude a facility from converting a 3-hour rolling average limit to the same limit expressed as a 365-day rolling average limit if such demonstration of compliance is based upon CEMS or PEMS.

30. Premcor shall install, certify, calibrate, maintain and operate all NOx CEMS required by Paragraph 29 in accordance with the provisions of 40 C.F.R. Section 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60, Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4., Premcor must conduct either a Relative Accuracy Audit (“RAA”) or a Relative Accuracy Test Audit (“RATA”) on each CEMS required by Paragraph 29 at least once every three (3) years. Premcor must also conduct Cylinder Gas Audits (“CGA”) each calendar quarter during which a RAA or a RATA is not performed.

**G. Reserved**

31. – 33. Reserved.

**H. Additional Provisions**

34. Nothing in this Addendum is intended to limit Premcor from satisfying any provisions of this Part IV earlier than the applicable compliance date specified in this part.

## **V. NO<sub>x</sub> EMISSION REDUCTIONS FROM FCCUs**

**Program Summary:** Premcor will implement a program to limit NO<sub>x</sub> emissions from its FCCU regenerators by achieving a system-wide average of unit-specific NO<sub>x</sub> concentration emission limits for each of the FCCUs subject to this Part V.

### **A. – F. Reserved**

35. – 44. Reserved.

### **G. FCCU NO<sub>x</sub> Emission Reductions**

45. Premcor shall attain a system-wide, coke burn-weighted average of NO<sub>x</sub> concentration emission limits for each FCCU at the Premcor Refineries (hereinafter collectively referred to as “Covered FCCUs”) in accordance with the provisions of this Section G.

45A. On or before December 31, 2011, Premcor shall complete an optimization study of the oxygen control system (O<sub>2</sub> CS) on the FCCUs at the Lima and Memphis Refineries in an effort to achieve NO<sub>x</sub> concentration emissions of 20 ppmvd (at 0% O<sub>2</sub>) as a 365-day rolling average and 40 ppmvd (at 0% O<sub>2</sub>) as a 7-day rolling average. Within sixty days after the conclusion of each optimization study, Premcor shall submit to EPA and the appropriate Plaintiff-Intervener reports detailing the NO<sub>x</sub> concentration emissions for the FCCUs through the optimization of the O<sub>2</sub> CS.

46. Appendix C to this Addendum (the “Initial FCCU Annual Coke Burn Rates”) provides a list of all Covered FCCUs, as of the Date of Lodging. Appendix C also identifies Premcor’s best estimate of maximum coke burn rate and any permit limits applicable to maximum coke burn rate for each such FCCU, as of the Date of Lodging.

47. Premcor shall submit to EPA an annual update to Appendix C on or before March 31 of each calendar year from 2009 through 2014, inclusive (the “Annual FCCU Update Report”), provided, however, that Premcor shall not be obligated to submit any Annual Update Report after satisfying the provisions of Paragraphs 55 and 56. The Annual FCCU Update Report shall identify Premcor’s best estimate of maximum coke burn rate and any permit limits relating to maximum coke burn rate for

each Covered FCCU as of the date of the report. Premcor shall identify and explain any such differences from the previous report under Paragraph 46 and this Paragraph 47.

48. Premcor shall attain the following system-wide, coke burn-weighted average of NOx concentration emission limits for Covered FCCUs by the following dates: (a) an interim NOx concentration emission limit average of 69.2 ppmvd (at 0% O<sub>2</sub>), as a 365-day rolling average, by December 31, 2010 (the "Interim NOx System-Wide Average"), as determined in accordance with Paragraph 54 and (b) a final NOx concentration emission limit average of 33.4 ppmvd (at 0% O<sub>2</sub>), as a 365-day rolling average, by December 31, 2013 (the "NOx System-Wide Average"), as determined in accordance with Paragraph 56.

49. Premcor shall select from among the Covered FCCUs those units for which NOx emissions shall be controlled or otherwise reduced so that Premcor satisfies the Interim NOx System-Wide Average and the NOx System-Wide Average. Provided however, no Covered FCCU will have a permit limit higher than 80 ppmvd at 0% O<sub>2</sub> on a 365-day rolling average at the time it demonstrates compliance with Paragraph 48(b).

50. For the purposes of Premcor's satisfaction of Paragraph 48(a) and in the event that, subsequent to the Date of Entry of this Addendum and before December 31, 2010, Premcor permanently ceases operation of any Covered FCCU at the Premcor Refineries, then Premcor may include each such shutdown unit in its demonstration of compliance with the Interim NOx System-Wide Average, if Premcor notifies the appropriate permitting authority that such unit is no longer operational and requests the withdrawal or invalidation of any permit or permit provisions authorizing operation of such unit. For purposes of Premcor's demonstration under Paragraphs 53 and 54 of compliance with the Interim NOx System-Wide Average, the emissions rate of any such shutdown unit shall be equal to 20 ppmvd NOx at 0% O<sub>2</sub>, and the maximum coke burn rate attributed to any such shutdown FCCU shall equal the lesser of Premcor's best estimate of maximum coke burn rate or the FCCU's permit limit relating to maximum coke burn rate prior to the FCCU shutdown, provided,

however, that if a new FCCU is also constructed and operated at such refinery, then the maximum coke burn rate and the NOx emission limit of such new FCCU shall be used in lieu of the original Covered FCCU.

51. For purposes of this Section V.G, "maximum coke burn rate" shall mean the lesser of the permitted coke burn rate, if any, or Premcor's best current estimate on an average annual basis.

52. For the purposes of Premcor's satisfaction of Paragraph 48(b) and in the event that Premcor permanently ceases operation of any Covered FCCU subsequent to the Date of Entry of this Addendum and before December 31, 2013, then Premcor may include each such shutdown unit in its demonstration of compliance with the NOx System-Wide Average, if Premcor notifies the appropriate permitting authority that such unit is no longer operational and requests the withdrawal or invalidation of any permit or permit provisions authorizing operation of such unit. For purposes of Premcor's demonstration under Paragraphs 55 and 56 of compliance with the NOx System-Wide Average, the concentration emission limit of any such shutdown unit shall be equal to 20 ppmvd NOx at 0% O<sub>2</sub>, and the maximum coke burn rate attributed to any such Covered FCCU that is shutdown shall equal the lesser of Premcor's best estimate of maximum coke burn rate or the FCCU's permit limit relating to maximum coke burn rate prior to the FCCU shutdown, provided, however, that if a new FCCU is also constructed and operated at such refinery, then the maximum coke burn rate and the NOx emission limit of such new FCCU shall be used in lieu of the original Covered FCCU.

53. Compliance Demonstration: By March 31, 2011, Premcor shall submit to EPA a report demonstrating compliance with the Interim NOx System-Wide Average. The compliance report submitted pursuant to this paragraph shall include the following information for the relevant refineries, as applicable to Premcor's compliance demonstration:

a. The NOx concentration emission limit for each Covered FCCU at the Premcor Refineries which is the least of the following: (i) the allowable NOx concentration emission limit (as a 365-day average), based upon any existing, federally enforceable non-Title V permit condition,



including such a condition as may be reflected in a consolidated permit (where applicable), or (ii) the NOx concentration emission limit reflected in any application for a federally enforceable non-Title V permit, including a consolidated permit, where such limit would also be permanent, submitted by Premcor for such Covered FCCU prior to the date of submittal of the compliance report. In the event that Premcor identifies a NOx concentration emission limit for a Covered FCCU pursuant to this paragraph based on a NOx concentration emission limit then reflected in a pending permit application, Premcor shall not withdraw such application nor may Premcor seek to modify that application, nor request an increase in the NOx concentration emission limit reflected in such application, without prior EPA approval.

b. Reserved.

c. A demonstration of compliance with the Interim NOx System-Wide Average performed in accordance with Paragraph 54.

54. Premcor shall demonstrate compliance with the Interim NOx System-Wide Average by meeting the following inequality:

$$69.2 \geq [(\sum_i^n (EL_i \times HIR_i)) + IVN] / [(\sum_i^n HIR_i) + IVD]$$

Where:

$EL_i$  = The relevant NOx concentration emission limit for the Covered FCCU “i” at the Premcor Refineries, in parts per million, as reported pursuant to Paragraph 53(a);

$HIR_i$  = Maximum coke burn rate of the Covered FCCU “i” at the Premcor Refineries, as reported pursuant to Paragraph 47;

$n$  = The total number of Covered FCCUs at the Premcor Refineries

$IVN$  = The summation of the products of the relevant NOx concentration emission limit (in parts per million) and the Maximum coke burn rate for each Covered FCCU and the Golden Eagle FCCU as reported in the numerator pursuant to Paragraph 53 of the Consent Decree.

IVD = The summation of the Maximum coke burn rates for all Covered FCCUs and the Golden Eagle FCCU as reported in the denominator pursuant to Paragraph 53 of the Consent Decree.

55. Compliance Demonstration: By March 31, 2014, Premcor shall submit to EPA a report demonstrating compliance with the NOx System-Wide Average. The compliance report submitted pursuant to this paragraph shall include the following information for the relevant refineries, as applicable to Premcor's compliance demonstration:

a. The NOx emission limit for each Covered FCCU at the Premcor Refineries which is the least of the following: (i) the allowable NOx concentration emission limit (as a 365-day average), based upon any existing, federally enforceable non-Title V permit condition, including such a condition as may be reflected in a consolidated permit (where applicable), or (ii) the NOx concentration emission limit reflected in any application for a federally enforceable non-Title V permit, including a consolidated permit, where such limit would also be permanent, submitted by Premcor for such Covered FCCU prior to the date of submittal of the compliance report. In the event that Premcor identifies a NOx concentration emission limit for a Covered FCCU pursuant to this paragraph based on a NOx concentration emission limit then reflected in a pending permit application, Premcor shall not withdraw such application nor may Premcor seek to modify that application, nor request an increase in the NOx concentration emission limit reflected in such application without prior EPA approval.

b. Reserved.

c. A demonstration of compliance with the NOx System-Wide Average performed in accordance with Paragraph 56.

56. Premcor shall demonstrate compliance with the NOx System-Wide Average by meeting the following inequality:

$$33.4 \geq [(\sum_i^n EL_i \times HIR_i) + FVN] / [(\sum_i^n HIR_i) + FVD]$$

Where:

$EL_i$  = The relevant NOx concentration emission limit for the Covered FCCU "i", in parts per million, as reported pursuant to Paragraph 55(a);

$HIR_i$  = Maximum coke burn rate of the Covered FCCU "i" at the Premcor Refineries, as reported pursuant to Paragraph 47;

$n$  = The total number of Covered FCCUs at the Premcor Refineries.

$FVN$  = The summation of the products of the relevant NOx concentration emission limit (in parts per million) and the Maximum coke burn rate for each Covered FCCU and the Golden Eagle FCCU as reported in the numerator pursuant to Paragraph 55 of the Consent Decree.

$FVD$  = The summation of the Maximum coke burn rates for all Covered FCCU's and the Golden Eagle FCCU as reported in the denominator pursuant to Paragraph 55 of the Consent Decree.

57. – 58. Reserved.

#### **H. Additional Provisions**

59. Notwithstanding any provision of this Addendum to the contrary and in lieu of complying with any NOx emission control requirements established pursuant to this Part V, Premcor may elect to achieve NOx concentration emission limits of 20 ppmvd (at 0% O<sub>2</sub>) or less as a 365-day rolling average and 40 ppmvd (at 0% O<sub>2</sub>) or less as a 7-day rolling average by permanently shutting down such FCCU or FCCU-regenerator, or by application of any emission reduction method or technology, including any technology not specified in this Addendum, by the refinery-specific compliance date specified in this Part V. Premcor's election to satisfy its obligations under this Part V through compliance with this paragraph shall not limit the applicability or extent of Part XXIV (Effect of Settlement) with respect to such Covered FCCU.

60. Premcor shall take such action as may be necessary to ensure that each 365-day rolling average NOx emission limit used to demonstrate compliance under Paragraphs 55 and 56 is less than or equal to 80 ppm. In addition and as part of each permit or permit application under Paragraphs 55 and 56, Premcor shall also have or have applied for a 7-day rolling average NOx concentration emission limit that shall be numerically twice the 365-day rolling average NOx concentration emission limit used for that FCCU to demonstrate compliance under Paragraphs 55 and 56.

**I. CEMS**

61. Beginning no later than the Date of Entry for each Covered FCCU, Premcor shall use NO<sub>x</sub> and O<sub>2</sub> CEMS to monitor performance of the FCCU and to report compliance with the terms and conditions of this Addendum.

62. The CEMS will be used to demonstrate compliance with the respective NO<sub>x</sub> concentration emission limits established pursuant to this Part V. Premcor shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Premcor must also conduct CGA each calendar quarter during which a RAA or a RATA is not performed.

63. Reserved.

**VI. SO<sub>2</sub> Emission Reductions from FCCUs**

**Program Summary:** Premcor shall implement a program to reduce SO<sub>2</sub> emissions from their FCCUs, which shall include the commitment to limit SO<sub>2</sub> emissions from the Memphis and Port Arthur FCCUs to specific concentrations and otherwise limit SO<sub>2</sub> emissions from the Lima FCCU through the use of SO<sub>2</sub>-reducing catalyst additives.

**A. – L. Reserved**

64. – 82. Reserved.

**M. Additional Provisions**

83. Provisions for reduction of SO<sub>2</sub> emissions from Premcor refineries.

a. Memphis. Upon Date of Entry of this Addendum, Premcor shall comply with SO<sub>2</sub> concentration emission limits at the point of emission from the Memphis Refinery FCCU to the

atmosphere of no greater than 25 ppmvd measured as a 365-day rolling average and 50 ppmvd measured as a 7-day rolling average, both at 0% O<sub>2</sub>, and will continue to operate a wet gas scrubber at the Memphis Refinery FCCU.

b. Port Arthur. Upon Date of Entry of this Addendum, Premcor shall comply with SO<sub>2</sub> concentration emission limits at the point of emission from the Port Arthur Refinery FCCU to the atmosphere of no greater than 25 ppmvd measured as a 365-day rolling average and 50 ppmvd measured as a 7-day rolling average, both at 0% O<sub>2</sub>, and will continue to operate a wet gas scrubber at the Port Arthur Refinery FCCU.

c. Lima. Premcor shall commence implementation of the SO<sub>2</sub> adsorbing catalyst additive protocol described in Appendix E.

84. Reserved.

85. Premcor may elect to submit for approval by EPA, after an opportunity for consultation with the Ohio EPA, a plan for the operation of the Lima FCCU (including associated air pollution control equipment) during hydrotreater outages. Any such plan shall provide for the minimization of emissions during hydrotreater outages to the extent practicable. The plan shall consider, at a minimum, the use of low sulfur feed, storage of hydrotreated feed and an increase in additive addition rate. Any short term emission limits established for the Lima FCCU pursuant to this Addendum shall not apply during periods of hydrotreater outage provided that Premcor is in compliance with any plan submitted by Premcor under this paragraph for the Lima FCCU, and is maintaining and operating the FCCU in a manner consistent with good air pollution control practices. In order for the relief for short-term emission limits afforded by this paragraph to apply to a period of hydrotreater outage, Premcor shall comply with the plan approved by EPA under this paragraph at all times, including periods of startup, shutdown or malfunction of the hydrotreater. In addition, in the event that Premcor asserts that the basis for a specific hydrotreater outage for which Premcor seeks to secure the relief from short term emission limits provided under this paragraph is a shutdown (where no catalyst change out occurs)

required by ASME pressure vessel requirements or applicable state boiler requirements, Premcor shall submit to EPA a report that identifies the relevant requirements and justifies Premcor's decision to implement the shutdown during the selected time period. For the purposes of this Paragraph 85, "hydrotreater" shall include any units that hydrotreat or otherwise desulfurize FCCU feedstocks.

86. Notwithstanding any provision of this Addendum to the contrary, Premcor may elect to limit emissions from the Lima FCCU to SO<sub>2</sub> concentrations of 25 ppmvd or less, measured as a 365-day rolling average, and 50 ppmvd or less, measured as a 7-day rolling average, each at 0% O<sub>2</sub>, including without limitation by permanently shutting down such FCCU or by application of any emission reduction method or technology, including any technology not specified in this Addendum. Notwithstanding any provision of this Addendum to the contrary and in lieu of complying with any specific SO<sub>2</sub> emission control requirements established pursuant to this Part VI for a WGS, Premcor may elect to shut down such Refinery's FCCU. In the event that Premcor elects to demonstrate compliance with this Part VI for the Lima FCCU by complying with this paragraph, then Premcor must achieve compliance with this paragraph for the Lima FCCU by no later than the refinery-specific compliance date for completion of the demonstration period identified in Appendix E or as otherwise specified in this Part VI. Premcor's election to satisfy its obligations under this Part VI for any Premcor Refinery subject to this Addendum through compliance with this paragraph shall not limit the applicability or extent of Part XXIV (Effect of Settlement) with respect to such FCCU.

87. – 88. Reserved.

**N. Monitoring Emissions and Demonstrating Compliance**

89. Beginning no later than the Date of Entry for each covered FCCU, Premcor shall use SO<sub>2</sub> and O<sub>2</sub> CEMS to monitor performance of the FCCU and to report compliance with the terms and conditions of this Addendum.

90. CEMS will be used to demonstrate compliance with the respective SO<sub>2</sub> concentration emission limits established pursuant to this Part VI. Premcor shall make CEMS data available to EPA

and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Premcor must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed.

91. Reserved.

92. All CEMS data collected by Premcor during the effective life of the Addendum shall be made available by Premcor to EPA upon demand as soon as practicable.

93. Reserved.

## **VII. CO, OPACITY AND PARTICULATE EMISSIONS FROM FCCUs**

**Program Summary:** Premcor shall implement a program to limit CO and particulate emissions from its FCCUs and shall implement monitoring at each FCCU sufficient to demonstrate compliance with emission standards specified in this Part.

94. CO Emission Standard. Premcor shall limit CO emissions from the Covered FCCUs at the Premcor Refineries to 500 ppmvd (at 0% O<sub>2</sub>), measured as a one-hour block average, in accordance with the schedule identified herein.

95. Particulate Emission Standard. Premcor shall limit particulate emissions from the Covered FCCUs at the Premcor Refineries to one (1) pound per 1,000 pounds of coke burned (front half only according to Method 5B or 5F, as appropriate), measured as a one-hour average over three performance test runs, in accordance with the schedule identified herein.

96. Except as specified in Paragraph 104 and by no later than ninety (90) days from the Date of Entry of this Addendum, Premcor shall ensure that the FCCUs located at the Memphis and

Port Arthur Refineries shall comply with the CO, opacity and particulate emission standards specified in Paragraphs 94 and 95, respectively, and all applicable requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to CO, opacity and particulate emissions from FCCU regenerators.

97. By no later than ninety (90) days from the Date of Entry of this Addendum, Premcor shall ensure that the FCCU located at the Lima Refinery shall comply with the CO emission standard specified in Paragraph 94, and all applicable requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to CO emissions from FCCU regenerators.

98. By no later than December 31, 2013, Premcor shall ensure that the FCCU located at the Lima Refinery complies with the opacity and particulate emission standards specified in Paragraph 95 and all applicable requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to opacity and particulate emissions from FCCU regenerators.

99. Reserved.

100. Lodging of this Addendum shall satisfy any obligation otherwise applicable to Premcor to provide notification in accordance with 40 C.F.R. Part 60, Subparts A and J, including without limitation 40 C.F.R. § 60.7, with respect to the provisions of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to CO, opacity and particulate emissions from FCCU regenerators.

101. CEMS or an EPA approved alternative monitoring plan or monitoring waiver will be used to demonstrate compliance with the respective CO emission limits established pursuant to this Part VII. Premcor shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a



RATA on each CEMS at least once every three (3) years. Premcor must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed. To the extent that Premcor has conducted any performance testing of the relevant unit for PM emissions, and such performance testing was conducted in accordance with the procedures specified in EPA Method 5B or 5F, as appropriate, or 40 C.F.R. Part 63, Subpart UUU, and demonstrated compliance with the emission limits established under this part, then such performance testing shall satisfy any obligation otherwise applicable under this Part to conduct performance testing under 40 C.F.R. Part 60, Subparts A and J. Any future performance testing performed by Premcor to demonstrate compliance with the particulate emission limitations established by this Part shall be conducted in accordance with EPA Method 5B or 5F, as appropriate, set forth at 40 C.F.R. Part 60, Appendix A.

102. The CO, opacity, and particulate limits established pursuant to this Part VII shall not apply during periods of startup, shutdown or malfunction of the FCCUs or malfunction of the applicable CO or particulate control equipment, if any, provided that during startup, shutdown or malfunction, Premcor shall, to the extent practicable, maintain and operate the relevant affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

103. Continuous Opacity Monitoring System (COMS) or an approved AMP will be used to demonstrate compliance with the respective opacity limits established pursuant to this Part VII. Premcor shall make any COMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all COMS required by this paragraph in accordance with the provisions of 40 C.F.R. §60.11, §60.13, and Part 60 Appendix A, and the applicable performance specification test in 40 C.F.R. Part 60 Appendix B.

104. Within 180 days of the Date of Entry of the Addendum, Premcor will have submitted or shall submit to EPA complete opacity alternative monitoring plan ("AMP") applications for the FCCUs located at Memphis and Port Arthur. If such AMPs are not approved, Premcor shall within

ninety (90) days of receiving notice of such disapproval either invoke the dispute resolution provisions of Part XXIII or submit to EPA for approval, with a copy to the appropriate Plaintiff-Intervener, a plan and schedule that provides for compliance with the applicable monitoring requirements under NSPS Subpart J as soon as practicable. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring. These FCCUs shall not be subject to the applicable requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements relate to opacity from FCCU regenerators until EPA approves AMPs for opacity or Premcor complies with the above-identified requirements of this paragraph.

105. Reserved.

106. Nothing in this Addendum shall be interpreted to limit Premcor's opportunity to propose to EPA an alternative compliance monitoring plan (AMP) under 40 C.F.R. Part 60, Subpart A, for CO, opacity or particulate emissions from FCCUs under NSPS Subpart J.

#### **VIII. NSPS APPLICABILITY TO SO<sub>2</sub> EMISSIONS FROM FCCU REGENERATORS**

**Program Summary:** Premcor shall comply with all requirements of 40 C.F.R. Part 60, Subparts A and J, as such provisions relate to SO<sub>2</sub> emissions from FCCU Regenerators, by the deadlines specified in this Part.

107. Premcor's FCCU Regenerators at the following refineries shall be "affected facilities" pursuant to 40 C.F.R. Part 60, Subpart J, and shall comply with all requirements of 40 C.F.R. Part 60, Subparts A and J, as such provisions relate to SO<sub>2</sub> emissions from FCCU Regenerators, on the following dates:

- a. Lima Regenerator – December 31, 2010, or as specified in Paragraph 111
- b. Memphis Regenerator – Upon Date of Entry
- c. Port Arthur Regenerator – Upon Date of Entry

108. Lodging of this Addendum shall satisfy any obligation otherwise applicable to Premcor to provide notification in accordance with 40 C.F.R. Part 60, Subparts A and J, including without

limitation 40 C.F.R. § 60.7, with respect to the provisions of 40 C.F.R. Part 60, Subparts A and J, as such provisions relate to SO<sub>2</sub> emissions from FCCU Regenerators.

109. CEMS will be used to demonstrate compliance with the respective SO<sub>2</sub> emission limits established pursuant to this Part VIII. Premcor shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Premcor must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed.

110. The SO<sub>2</sub> limits established pursuant to this Part shall not apply during periods of startup, shutdown or malfunction of the FCCUs and hydrotreaters, or the malfunction of SO<sub>2</sub> control equipment, if any, provided that during startup, shutdown or malfunction, Premcor shall, to the extent practicable, maintain and operate the relevant affected facility, including associated air pollution control equipment, in a manner consistent with good air pollution control practices for minimizing emissions.

111. By December 31, 2008, Premcor shall submit to EPA a complete alternative monitoring plan ("AMP") application for NSPS Subpart J monitoring for SO<sub>2</sub> at the Lima FCCU. If such AMP is not approved, Premcor shall within ninety (90) days of receiving notice of such disapproval either invoke the dispute resolution provisions of Part XXIII or submit to EPA for approval, with a copy to the appropriate Plaintiff-Intervener, a plan and schedule that provides for compliance with the applicable monitoring requirements under NSPS Subpart J as soon as practicable. Such plan may

include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring.

112. Nothing in this Addendum shall be interpreted to limit Premcor's opportunity to propose to EPA an alternative compliance monitoring plan under 40 C.F.R. Part 60, Subpart A, for SO<sub>2</sub> emissions from FCCU regenerators.

#### **IX. SO<sub>2</sub> AND NSPS REQUIREMENTS FOR HEATERS AND BOILERS**

**Program Summary:** Premcor shall undertake the following measures at the Premcor Refineries to reduce SO<sub>2</sub> emissions from heaters and boilers by eliminating or minimizing the burning of fuel oil, and satisfying the provisions of 40 C.F.R. Part 60, Subparts A and J, as such provisions apply to fuel gas combustion devices.

113. By no later than the Date of Entry, Premcor shall discontinue the burning or combustion of Fuel Oil in any of the heaters and boilers at the Premcor Refineries, except as provided in Paragraph

114. For purposes of this Addendum, "Fuel Oil" shall mean fuel that is predominantly in the liquid phase at the point of combustion with a sulfur content of greater than 0.05% by weight.

114. Notwithstanding any provision of this Addendum to the contrary, Fuel Oil may be combusted or burned during periods of natural gas curtailment by suppliers or during periods approved by EPA for purposes of test runs and operator training at any refinery subject to this Addendum. During any such period of natural gas curtailment, test runs or operator training, only low sulfur (0.2% sulfur until December 31, 2009, 0.05 wt % sulfur thereafter) Fuel Oil shall be combusted or burned. Prior to conducting test runs or operator training at a refinery during which Fuel Oil will be burned pursuant to this paragraph, Premcor shall submit proposed schedules for such test runs or training periods to EPA for review and approval. In the event that EPA does not respond to such proposed schedules within thirty (30) days of submission pursuant to this paragraph, then such proposed schedules shall be deemed approved in accordance with the proposals submitted.

115. Except as provided in Paragraph 118, by no later than sixty (60) days after the Date of Entry, Premcor shall ensure that all heaters and boilers located at the Premcor Refineries are "affected facilities" as fuel gas combustion devices, for purposes of 40 C.F.R. Part 60, Subpart J, and shall

comply with all requirements of 40 C.F.R. Part 60, Subparts A and J, as such requirements apply to fuel gas combustion devices.

116. – 117. Reserved.

118. By no later than the date specified in Paragraph 115, all heaters and boilers at such refineries shall comply with the applicable requirements of NSPS Subpart A and J for fuel gas combustion devices, except for those heaters or boilers listed in Appendix O, which shall be affected facilities and shall be subject to and comply with the requirements of NSPS Subparts A and J for fuel gas combustion devices by the dates listed in Appendix O. All CEMS installed pursuant to this paragraph shall be installed, certified, calibrated, maintained and operated in accordance with the applicable requirements of 40 C.F.R. §§ 60.11 and 60.13 and 40 C.F.R. Part 60, Appendix F as provided in Paragraph 121 below.

119. Within two (2) years of Entry of the Addendum, Premcor may submit to EPA and the appropriate Plaintiff-Intervener complete alternative monitoring plan (“AMP”) applications for NSPS Subpart J monitoring of fuel gas combustion devices. If such AMP is not approved, then within ninety (90) days of receiving notice of such disapproval, Premcor shall submit to EPA for approval, with a copy to the appropriate Plaintiff-Intervener, a plan and schedule that provides for compliance with the applicable monitoring requirements under NSPS Subpart J as soon as practicable. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring. For some heaters and boilers that combust low-flow VOC streams from vents, pumpseals and other sources, it is anticipated that some AMP applications will rely in part on calculating a weighted average H<sub>2</sub>S concentration of all VOC and fuel gas streams that are burned in a single heater or boiler and demonstrating with alternative monitoring that either the SO<sub>2</sub> emissions from the heater or boiler will not exceed 20 ppm or that the weighted average H<sub>2</sub>S concentration is not likely to exceed 162 ppm H<sub>2</sub>S. EPA shall not reject an AMP solely due to the AMP’s use of one of these approaches to demonstrate compliance with NSPS Subpart J.

120. Lodging of this Addendum shall satisfy any obligation otherwise applicable to Premcor to provide notification in accordance with 40 C.F.R. Part 60, Subparts A and J, including without limitation 40 C.F.R. § 60.7, with respect to the provisions of 40 C.F.R. Part 60, Subparts A and J, as such requirements apply to fuel gas combustion devices.

121. The CEMS or approved AMPs will be used to demonstrate compliance with the respective H<sub>2</sub>S/SO<sub>2</sub> concentration emission limits established pursuant to this Part IX. Premcor shall make CEMS data available to EPA and any appropriate Plaintiff-Intervener upon demand as soon as practicable. Premcor shall install, certify, calibrate, maintain and operate all CEMS required by this paragraph in accordance with the provisions of 40 C.F.R. § 60.13 that are applicable to CEMS (excluding those provisions applicable only to continuous opacity monitoring systems) and Part 60, Appendices A and F, and the applicable performance specification test of 40 C.F.R. Part 60, Appendix B. With respect to 40 C.F.R. Part 60 Appendix F, in lieu of the requirements of 40 C.F.R. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, Premcor must conduct either a RAA or a RATA on each CEMS at least once every three (3) years. Premcor must also conduct a CGA each calendar quarter during which a RAA or a RATA is not performed.

122. The SO<sub>2</sub> limits established pursuant to this Part shall not apply during periods of startup, shutdown or malfunction of the heaters and boilers or the malfunction of SO<sub>2</sub> control equipment, if any, provided that during startup, shutdown or malfunction, Premcor shall, to the extent practicable, maintain and operate the relevant affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practices for minimizing emissions.

#### **X. BENZENE WASTE NESHAP PROGRAM ENHANCEMENTS**

**Program Summary:** Premcor shall undertake the following measures to minimize fugitive benzene waste emissions at each of the Refineries that are covered by this Addendum.

123. Premcor agrees to undertake the measures set forth in this Part X, which establish enhancements to applicable requirements of 40 C.F.R. Part 61, Subpart FF ("Benzene Waste

NESHAP” or “Subpart FF”), and which will minimize or eliminate fugitive benzene waste emissions at the Premcor Refineries.

**A. Compliance Status and Schedule**

124. Premcor shall comply with the compliance options specified below:

a. Premcor’s Lima and Memphis Refineries shall comply with the compliance option set forth at 40 C.F.R. 61.342(e) (herein referred to as the “6 BQ Compliance Option”), to the extent that either refinery continues to have total annual benzene (“TAB”) quantity  $\geq 10$  megagrams per year (“Mg/yr”). Upon completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, the Lima and Memphis Refineries shall comply with the 6 BQ Compliance Option. Prior to completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, the Lima and Memphis Refineries shall continue to operate current controls for purposes of complying with the 6 BQ Compliance Option.

b. Premcor’s Port Arthur Refinery shall continue to comply with the compliance option set forth at 40 CFR 61.342(c), utilizing the exemptions set forth in 40 CFR 61.342(c)(2) and (c)(3)(ii) and the aggregation provisions set forth in 40 CFR 61.348(b) (hereinafter referred to as the “2 Mg Aggregate-and-Treat Compliance Option”), to the extent that it continues to have total annual benzene (“TAB”) quantity  $\geq 10$  megagrams per year (“Mg/yr”). Upon completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, the Port Arthur Refinery shall comply with the 2 Mg Aggregate-and-Treat Compliance Option. Prior to completion of all corrective action identified in the plan submitted pursuant to Paragraph 134, the Port Arthur Refinery shall continue to operate current controls for purposes of complying with the 2 Mg Aggregate-and-Treat Compliance Option.

124A. Premcor, in its sole discretion, may transition the Port Arthur Refinery from a 2Mg compliance option to the 6BQ Compliance Option in accordance with the provisions of this paragraph and Paragraph 125.

125. On or before the Date of Entry, if Premcor chooses to transition the Port Arthur Refinery, then Premcor shall provide written notice to EPA of Premcor's determination to transition the Port Arthur Refinery to the 6 BQ Compliance Option. Upon completion of all corrective action identified in the plan pursuant to Paragraph 134 for the Port Arthur Refinery, Premcor shall comply with all standards of Subpart FF that are applicable to facilities utilizing the 6 BQ Compliance Option, including the monitoring, recordkeeping and reporting requirements of 40 C.F.R. §§ 61.354, 61.356 and 61.357, respectively, as applicable to facilities utilizing the 6 BQ Compliance Option. Once converted, subparagraph 124(b) shall no longer apply.

**B. Refinery Compliance Status Changes**

126. Commencing on the Date of Entry of the Addendum and continuing through termination, Premcor shall not change the compliance status of the Lima or Memphis Refineries from the 6 BQ Compliance Option to a 2 Mg compliance option. Subsequent to achieving compliance with Paragraph 125, if applicable, Premcor shall not change the compliance status of the Port Arthur Refinery from the 6 BQ Compliance Option to a 2 Mg compliance option. Premcor shall consult with EPA and the appropriate Plaintiff-Intervener before making any change in compliance status not expressly prohibited by this Paragraph 126. Any such change must be undertaken in accordance with the regulatory provisions of the Benzene Waste NESHAP.

**C. One-Time Review and Verification of Each Refinery's TAB and, as Applicable, Each Refinery's Compliance with the Appropriate Compliance Options**

127. On or before June 30, 2008, if Premcor chooses to transition the Port Arthur Refinery, then Premcor shall complete a review and verification of the Refinery's TAB as specified in subparagraphs 128(a) – (d) for the Port Arthur Refinery to determine compliance with the 6 BQ Compliance Option. Premcor shall implement all actions necessary to ensure compliance with the 6



BQ Compliance Option at the Port Arthur Refinery in accordance with Paragraph 125. Notwithstanding any other provisions of this Addendum, if the Port Arthur Refinery is transitioned to the 6BQ Compliance Option, then it shall not be subject to the terms of this Part X applicable to refineries subject to the 6 BQ Compliance Option, nor shall it be subject to the terms of this Part X applicable to refineries subject to a 2 Mg compliance option, prior to Premcor's compliance with this paragraph. Except as set forth in this paragraph, the provisions of Paragraph 128 shall not apply to the Port Arthur Refinery.

128. Phase One of the Review and Verification Process. By no later than six months from the Date of Lodging, Premcor shall complete a review and verification of each Refinery's TAB to determine compliance with the applicable 2 Mg compliance option for the Port Arthur Refinery, to the extent that it is not transitioned to the 6 BQ Compliance Option, and to determine compliance with the 6BQ Compliance Option for the Lima and Memphis Refineries. For each such Refinery, the review and verification process shall include:

- a. an identification of each waste stream that is required to be included in the Refinery's TAB (e.g., slop oil, tank water draws, spent caustic, desalter rag layer dumps, desalter vessel process sampling points, other sample wastes, maintenance wastes, and turnaround wastes);
- b. a review and identification of the calculations and/or measurements used to determine the flows of each waste stream for the purpose of ensuring the accuracy of the annual waste quantity for each waste stream;
- c. an analysis of the benzene concentration in each waste stream, using previous analytical data, documented knowledge of the waste streams or new analytical testing data in accordance with 40 C.F.R. § 61.355(c)(2); and
- d. an identification of whether or not the stream is controlled consistent with the requirements of Subpart FF.

129. By no later than thirty (30) days following the completion of the review and verification process in Paragraphs 127 and 128, Premcor shall submit a Benzene Waste NESHAP Compliance Review and Verification Report ("BWN Compliance Review and Verification Report") that sets forth the results as identified in (a) through (d) of Paragraph 128. At its option, Premcor may submit one BWN Compliance Review and Verification Report that includes the results of all non-converted Refineries or may submit separate BWN Compliance Review and Verification Reports for each Refinery.

130. Phase Two of the Review and Verification Process. Based on EPA's review of the BWN Compliance Review and Verification Report(s), EPA may select up to twenty (20) waste streams at each Refinery for sampling for benzene concentration. Premcor will conduct the required sampling and submit the results to EPA within ninety (90) days of receipt of EPA's request. In the event that a stream for which EPA has required sampling is not available for sampling under normal operating conditions within a timeframe that would allow Premcor to satisfy such schedule, then Premcor shall submit sampling results for the subject refinery without the result for the unavailable stream in accordance with the foregoing schedule, and shall supplement the sampling report as soon as practicable after such sampling result becomes available under representative operating conditions.

131. Premcor will use the results of this sampling under Paragraph 130 to recalculate the TAB and the uncontrolled benzene quantity and to amend the relevant BWN Compliance Review and Verification Report, as needed. To the extent that EPA requires Premcor to sample a waste stream previously sampled, Premcor may average the results of all sampling events occurring after January 1, 2001. Premcor shall submit an amended BWN Compliance Review and Verification Report for the relevant Refinery, if necessary, within ninety (90) days following the date of the completion of the required Phase Two sampling, if Phase Two sampling is required by EPA.

**D. Implementation of Corrective Actions**

132. Amended TAB Reports. If the results of any BWN Compliance Review and Verification Report(s), indicate(s) that a Refinery's most recently-filed TAB report does not accurately reflect the TAB calculation for the Refinery, Premcor shall submit, by no later than sixty (60) days after completion of the BWN Compliance Review and Verification Report(s), an amended TAB report to the appropriate regulatory authority. The BWN Compliance Review and Verification Report(s) shall be deemed an amended TAB report for purposes of Subpart FF reporting to EPA.

133. Reserved.

134. Corrective Action. If the results of any BWN Compliance Review and Verification Report(s) indicate that Premcor is not in compliance with the applicable 2 Mg compliance option at the Port Arthur Refinery, to the extent that it is not converted to the 6 BQ Compliance Option, or the 6BQ Compliance Option at the Lima or Memphis Refineries or at the Port Arthur Refinery, to the extent converted to the 6 BQ Compliance Option, then Premcor shall submit to EPA, to the appropriate EPA Region, and to the appropriate Plaintiff-Intervener, by no later than sixty (60) days after completion of the BWN Compliance Review and Verification Report(s), a plan that identifies with specificity the compliance strategy and schedule that Premcor will implement to ensure that the subject Refinery complies with its applicable compliance option, or an alternative compliance option authorized under Subpart FF and Paragraph 126 as soon as practicable.

135. Review and Approval of Plans Any plans submitted pursuant to Paragraph 134 shall be subject to the approval of, disapproval of, or a request for modification by EPA, which shall act, after an opportunity for consultation with the appropriate Plaintiff-Intervener, consistent with the Benzene Waste NESHAP. Within sixty (60) days after receiving any notification of disapproval or request for modification from EPA, Premcor shall submit to EPA a revised plan that responds to all identified deficiencies. Upon receipt of approval from EPA, Premcor shall commence implementation of the plan according to the schedule approved in the plan. Disputes arising under this Paragraph 135 shall be resolved in accordance with the dispute resolution provisions of this Addendum. Within sixty (60)

days of completion of all requirements above, Premcor shall certify to EPA and the appropriate Plaintiff-Intervener that each Refinery is in compliance with the Benzene Waste NESHAP.

**E. Carbon Canisters**

136. For each of the Premcor Refineries that is subject to the 6 BQ or 2 Mg compliance options control requirements of the Benzene NESHAP, Premcor shall comply with the requirements of this Section X.E at all locations at such Refineries where a carbon canister(s) is utilized as a control device under the Benzene Waste NESHAP.

137. From the Date of Entry of the Addendum through termination of this Part, Premcor shall not use a single carbon canister for any new units or installations that require control pursuant to the Benzene Waste NESHAP at any Refineries subject to the 6 BQ or 2 Mg compliance options, unless it is technically infeasible or unsafe to use a dual carbon canister system or except as provided for in Paragraphs 138 and 139 for short term installations.

138. For existing carbon canister systems used to control emissions from installations that require control, Premcor shall complete installation of primary and secondary carbon canisters and operate them in series, by no later than 270 days after the Date of Entry of the Addendum. Notwithstanding any other provision of this Part X, Premcor may operate single canisters for short-term operations such as with temporary storage tanks. For all canisters operated for short-term operations as part of a single canister system, "breakthrough" is defined for the purposes of this Decree as any reading of VOCs above background. Beginning no later than the Date of Entry of this Addendum, Premcor shall monitor for breakthrough from a single carbon canister installation no less frequently than on a daily basis.

139. For locations where single canisters are utilized for short term operations, canisters will be replaced when breakthrough is determined within eight (8) hours for canisters with historical replacement intervals of two weeks or less or within twenty-four (24) hours for canisters with a historical replacement interval of more than two weeks. Single carbon canisters can be replaced with a

dual system (in series) at any time, provided single canister monitoring is continued until the second canister is installed.

140. By no later than ninety (90) days following the Date of Entry, Premcor shall submit to EPA a report concerning carbon canisters installed pursuant to Subpart FF at the Premcor Refineries. The report shall include the following information for each Refinery:

- a. a list of all permanent locations within each Refinery where carbon canisters are installed;
- b. the installation date of each secondary canister installed in accordance with Paragraph 138;
- c. the date that each secondary canister installed in accordance with Paragraph 138 was put into operation;
- d. the identity and location of each engineered carbon canister system, as hereinafter defined;
- e. the capacity in pounds of carbon of each engineered carbon canister system; and
- f. a list of and supporting justification for each instance in which a dual carbon canister system is not installed because of technical infeasibility or the creation of an unsafe condition at a location otherwise requiring a dual carbon canister system under Paragraph 137.

141. From the Date of Entry and through termination of the Addendum, "breakthrough" between the primary and secondary canister is defined as any reading equal to or greater than 100 ppm VOCs or 5 ppm benzene. In the event that Premcor elects to monitor for both VOCs and benzene pursuant to this provision, then "breakthrough" between the primary and secondary canister shall be defined only as a reading greater than 5 ppm benzene, provided that Premcor satisfies the following conditions:

a. Premcor shall collect and analyze the sample for benzene as soon as practical, and in no event later than 24 hours after obtaining the relevant VOC reading; and

b. Premcor shall conduct monitoring for benzene breakthrough between the primary and secondary carbon canisters for the subject dual carbon canister system until such time as it replaces the relevant primary carbon canister with the secondary carbon canister pursuant to Paragraph 143 according to the following schedule: (i) where the design carbon replacement interval for the unit is less than or equal to 30 days, Premcor shall monitor every operating weekday; (ii) where the design carbon replacement interval for the unit is 31 to 60 days, Premcor shall monitor at least twice a week; (iii) where the design carbon replacement interval for the unit is greater than sixty (60) days, Premcor shall monitor at least weekly.

142. By no later than seven (7) days after the Date of Entry of the Addendum (for existing dual canister systems), and by no later than seven (7) days after the installation of each new dual canister system, Premcor shall start to monitor for breakthrough between the primary and secondary carbon canisters at times when the source is connected to the carbon canister, and during periods of normal operation in accordance with the frequency specified in 40 C.F.R. § 61.354(d) (but in no event less frequently than once per month), or alternatively at least once on each operating weekday.

143. Premcor shall replace the original secondary carbon canister with a fresh carbon canister immediately when breakthrough between the primary and secondary canister is detected. The original secondary carbon canister will become the new primary carbon canister and the fresh carbon canister will become the secondary canister.

a. For carbon canisters not qualifying as engineered carbon canister systems pursuant to this paragraph, "immediately" shall mean within twenty-four (24) hours; provided, however, that if breakthrough is determined on a Saturday, Sunday, or holiday, then Premcor shall replace the original primary carbon canister by the end of the next regular work day if Premcor begins monitoring the secondary canister at least once per operating day until the primary canister is replaced.

b. For engineered carbon canister systems, "immediately" shall mean not more than fourteen (14) days if Premcor monitors the secondary canister at least once per operating day until the carbon in the primary canister is replaced and such monitoring of the secondary canister does not reveal "breakthrough", as defined in Paragraph 141. If breakthrough from the secondary canister is revealed, Premcor shall replace the secondary carbon canister within twenty-four hours of securing such monitoring results. For purposes of this Paragraph 143, "engineered carbon canister systems" shall mean carbon systems with fixed vessels for which each vessel has a capacity of carbon in excess of 5000 pounds.

c. In lieu of replacing a primary or secondary carbon canister pursuant to the terms of this paragraph, Premcor may elect to discontinue flow of benzene containing streams to the relevant carbon canister system until such canister is replaced.

144. Premcor shall maintain or otherwise provide for a reasonable supply of fresh carbon and carbon canisters at each of the Premcor Refineries.

145. Records to demonstrate compliance with the requirements of this Section X.E shall be maintained in accordance with 40 C.F.R. § 61.356(j)(10).

**F. Annual Program**

146. Premcor shall establish an annual program of reviewing process information for each of the Premcor Refineries, including but not limited to construction projects, to ensure that all new benzene waste streams are included in each Refinery's waste stream inventory. Premcor may fulfill this requirement by incorporating new benzene waste stream review into its existing "management of change" program.

**G. Laboratory Audits**

147. Premcor shall conduct audits, or secure results of audits conducted by parties other than the laboratories, of all laboratories that perform analyses of benzene waste NESHAP samples collected

at the Premcor Refineries to ensure that proper analytical and quality assurance/quality control procedures are followed.

148. By no later than one (1) year after the Date of Entry of the Addendum, Premcor shall conduct audits, or secure results of audits conducted by parties other than the laboratories, of the laboratories used by the Premcor Refineries. In addition, Premcor shall audit any new laboratory, or secure results of audits conducted by parties other than the new laboratory, used for analyses of benzene waste NESHAP samples prior to use of the new laboratory by a Refinery subject to this Addendum.

149. If Premcor has completed audits of any laboratory in the one year period prior to the Date of Entry of the Addendum, additional audits of those laboratories pursuant to Paragraph 148 shall not be required.

150. During the life of this Addendum, Premcor shall conduct subsequent laboratory audits, or secure results of audits conducted by parties other than the laboratories, as provided above, such that each laboratory serving each Premcor Refinery is audited every two (2) years.

151. As stated above, Premcor may retain third parties to conduct these audits or use audits conducted by others as its own, but the responsibility and obligation to ensure compliance with this Addendum and Subpart FF would remain with Premcor.

## **H. Benzene Spills**

152. Premcor shall review all spills reportable under applicable federal and state standards that occur after the Date of Entry of this Addendum within each of the Premcor Refineries to determine if aqueous benzene waste was generated. To the extent required by the Benzene Waste NESHAP regulations and not already in the TAB, Premcor shall include benzene generated by such spills in the TAB. To the extent required by the Benzene Waste NESHAP regulations, Premcor shall include benzene generated by such spills in the uncontrolled benzene quantity calculations for each Refinery.